

THE BILINGUAL INSTRUCTION IN MATHEMATICS INTERNATIONAL CLASS PROGRAM AT STATE UNIVERSITY OF MAKASSAR

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ABSTRACT

This research aimed at knowing when the lecturer uses English to bilingual class in Mathematics ICP, why the lecturer uses bilingual language in Mathematics ICP, and the students' attitude toward the bilingual instruction.

This research employed the mixed method which combined qualitative and quantitative method. The researcher gathered data from lecturer and students that use Bilingual (English – Indonesia) in teaching and learning Mathematics batch 2017 in academic year 2019/2020. The researcher used cluster random sampling technique which the sample was determined by lecturers' decision. The researcher made field notes, conducted interview, and gave questionnaire as techniques of data collection while the instruments used were observation guide, questionnaire, and interview.

The result of this research showed that : (1) The lecturer of Mathematics ICP uses bilingual instruction in the class when the lecturer teaches the students. But the way is that the lecturer does not use English merely. (2) The reason of why the lecturer uses bilingual instruction is because the lecturer realizes that the class the lecturer teaches is different than regular class. It is also because the rule of the department considering that the class is International Class Program makes it a requirement to use bilingual instruction. (3) After computing the data, it is found that the mean of the data from questionnaire was 69,1. If the mean score is classified into the table of score interpretation, it is found that the mean score is located in the range of 69-84. It means that the score can be interpreted into positive. In other words, the response of the respondents in this case the students' attitudes toward bilingual instruction instructed by the lecturer are positive.

Keywords: Bilingual Instruction, Mathematics International Class Program, Students' Attitude

INTRODUCTION

Using two or more languages are usually called as bilingualism and multilingualism. Since there are many people who need to learn English to keep up with others, who realize that English is very popular and becomes a global language. Realizing the importance of English language in the international world, Indonesian people also learn English especially in education.

Indonesian government has realized how important qualified education in Indonesia. Therefore, the government has to make serious efforts to improve the quality of national education. People's need for getting more and more towards qualified education shows that education has become one of powerful and authoritative social life institutions. Government has many innovations to improve the quality and create qualified students in order make better education. One of the innovations made by government is International Class. In International class, teacher and students use English – Indonesia, that we called bilingual language.

In Indonesia some universities introduced bilingual program in order to improve the quality of their graduate. In South Sulawesi Province, one of the universities which conducted bilingual program is International Class Program (ICP) in Science and Mathematics Faculty of State University of Makassar. Since 2007, there are five international study programs in Department of Faculty of Science (FMIPA). There is mathematics education, biology education, chemistry education, physics education, and geography education. This research will focus on bilingual instruction in Mathematics ICP. There are two languages used in this department in teaching and learning process, namely Indonesia and English.

The problem that face by students in learning English is about their attitude. According to Shams (2008), in foreign language learning context, there are various factors that influence the English such as motivation, attitudes, anxiety, learning achievements, aptitudes, intelligence, age, personalities, etc. Attitude is one of the important factors that impacts on English. So, since ICP used English in teaching and learning still questioned, how it is run and implemented. The bilingualism in teaching Mathematics is also questioned. The main questions are how the lecturer's use the bilingual instruction in teaching and learning process, the student' attitude, and the

students' perception in using bilingualism especially in Mathematics ICP of State University of Makassar. Therefore, the research questions that are posed here are as follows:

1. When does the lecturer use bilingual instruction to bilingual class in Mathematics ICP at State University of Makassar?
2. Why does the lecturer use bilingual language in Mathematics ICP?
3. How are the students' attitudes toward bilingual instruction?

REVIEW OF RELATED LITERATURE

There are some previous findings that related with this research. Hong (2010) had conducted a research an overview of bilingual education. He concludes that there are several types of bilingual education program, which range from transitional to heritage model. These differences reflect the condition from which the program emerges. And Rajab (2014) presented research about The Students' Attitude toward Lecturers' Explanation in EFL Classroom at Muhammadiyah University of Makassar. The research employed descriptive Quan-Qual method. The objectives of the research were to find out the students' attitude toward lecturer's explanation and to find out the good characteristics of lecturer's explanation.

1. Bilingual Instruction

Bilingual instruction defines itself as the teaching of any discipline except language courses in a foreign language, which serves the dual purpose of improving students' second language as well as non-language disciplines. Wang, (2003)

The instructional phase is the core phase. It is when the teacher explains the material that arranged by the teacher. Rasyid (2016) divided the phrase that the EFL teacher do in

the classroom, which are *beginning*, *running*, and closing the class. The Phases are mention below:

a. Beginning the class

- *Assalamu alaykum (warahmatullahi wabarakatuh)*
- *Good morning/afternoon, is this class (A,B, C etc)*
- *How's life?*

b. Running the class

- *Well, Right, ok. Can anyone tell us what have we discussed last week?*
- *Well class, open page.....*
- *The objective of our lesson today are...*

c. Ending/closing the lesson

- *We're almost finished*
- *Well, your homework please do exercise.....*
- *See you next week.*

2. Attitude

In Longman's dictionary (2002) attitudes are the opinions and feelings that one usually has about something or someone. They can be positive or negative. Glanz, *et al.*, (2008) state that attitude is determined by the individual's beliefs about outcomes or attributes of performing the behavior (behavior beliefs), weighted by evaluations of those outcomes or attributes. Thus, a person who holds strong beliefs that positively valued outcomes will result from performing the behavior will have a positive attitude toward the behavior. Conversely, a person who holds strong beliefs that negatively valued outcomes will result from the behavior will have a negative attitude. Furthermore, Asher *et al.*, (2008) defined

attitude as a disposition or tendency to respond positive or negative toward certain things (idea, object, person, situation and so forth). An attitude concerning a class of objects is the meaning that class has for the person, with a stress on how the individual evaluates the class, whether positively or negatively. Someone who has positive attitude will view the object is valuable, while someone with negative attitude will view that an object is not valuable.

METHOD AND DATA COLLECTION

This research employed the mixed method. Mixed methods design is an approach to inquiry combine two research method, qualitative and quantitative to collect data, integrate the two forms data using distinct designs that may involve philosophical assumptions and theoretical frameworks. Qualitative data are usually collected by observation guide and interview. While quantitative method used to get the counting result of questionnaire.

This research was conducted in Faculty of Mathematics and science (FMIPA) at State University of Makassar. The researcher gathered data from lecturer and students that use Bilingual (English – Indonesia) in teaching and learning Mathematics batch 2017 in academic year 2019/2020. The researcher used cluster random sampling technique which the sample was determined by lecturers' decision.

FINDINGS AND DISCUSSION

1. The use of English in bilingual class in Mathematics ICP
 - a. Beginning section

In the beginning section, we can see that all the stages were done by the lecturer. The stages were opening the class, giving apperception, and giving brainstorming, ice-breaking, or material introduction. When opening the class, the

lecturer said Salam and continued to check the students' presence. In checking the students' presence, the lecturer used fully English except the students' name. When giving apperception, the lecturer told the students the purpose of today's lesson. The lecturer told the students what was going to be achieved and the reason or the importance of why they studied the kind of lesson. The activities were done in mix language. The activities were done 50% in English and 50% in Indonesian.

b. Running Section

In the running section, when asking/commenting the students, the lecturer asked the students questions first. Then, the lecturer let the students answer the question. The lecturer then sometimes gave additional information regarding with the students answer. The lecturer also gave comments when the answer of the students was still incorrect. In this stage, the researcher summed up the activities into three different cases that the researcher thought were the major activities of the stage that could best be the case sample.

In case 1, the lecturer gave a question to student and let the student answer the question by explaining the student's thought or concept then added by the lecturer with some elaboration. In case 2, the lecturer explained a concept then asked the student a question regarding with the concept then the lecturer added some explanation after the students answer. In case 3, the lecturer explained a concept then asked the students a question regarding with the concept without adding any elaboration. In case 1, the lecturer used English more than Indonesian. We can also see that when the lecturer asked the student in English, the student also responded in English while in case 2 and 3, the lecturer used Indonesian more than

English. Overall, the activities in the running section were done 39% in English instruction and 61% in Indonesian instruction.

c. Closing Section

For evaluating/concluding the learning process, the researcher summed up into two cases in which the researcher thought were the sample cases. In case 1, the lecturer asked the students about their conclusion about the lecturer's explanation. The students then responded the lecturer by explaining their concept. In case 2, the lecturer told the students that there would be no home work. The lecturer also highlighted several points for the students to be learnt dealing with the upcoming mid-term test. In case 1, we can see that the lecturer used full English. In case 2; the lecturer used Indonesian and English almost equally. When closing the class, the lecturer ended the class by saying the lecturer's last utterance and considering that there was no question anymore from the students. According to the extract, the lecturer used Indonesian and English almost equally. Overall, the activities in the closing section by count the total words in Indonesian and English it was done 54% in English instruction and 46% in Indonesian instruction.

2. The reasons of using bilingual instruction in Mathematics ICP

The lecturer realized that the class the lecturer taught was different than regular class and also because the rule of the department considering that the class is International Class Program so it should a requirement to use bilingual instruction. It is clear that the Mathematics International Class Program is a class in which the students are required to study in two languages: Indonesian and English.

3. Students' Attitudes toward Bilingual Instruction

Table 4. 1 Interpretation of Score

NO	Score	Classification	Frequency	Percentage
1	85-100	Strongly Positive	0	0%
2	69-84	Positive	18	60%
3	52-68	Undecide	12	40%
4	36-51	Negative	0	0%
5	20-35	Strongly Negetive	0	0%

After computing the data using SPSS, it was found that the mean of the data from questionnaire was 69,1. If the mean score is classified into the table of score interpretation, it would be found that the mean score is located in the range of 69-84. It means that the score can be interpreted into positive. In other words, the response of the respondents in this case the students' attitudes toward bilingual instruction instructed by the lecturer are positive.

It is clear that the students' attitude towards bilingual instruction is positive and that is why they perceive the bilingual instruction as something that does not degrade their performance in the class at all. Brown *et al.*, (2007) shows that the second language learners' benefit from positive attitudes and that negative attitudes may lead to decreased motivation and, in all likelihood, because of degreased input and interaction, to unsuccessful attainment of proficiency. Because the students of Mathematics ICP's attitude towards bilingual instruction are positive, it will result on their achievement in the class that is maximal as well.

CONCLUSION

1. The lecturer of Mathematics ICP uses bilingual instruction in the class when the lecturer teaches the students. But the way is that the lecturer does not use English merely. The lecturer tends to use English in matters that occur frequently such as opening the class, giving apperception, explaining terms, and closing the class. While for matters that are substantive such as explaining the concept, answering students' question, and commenting to students, the lecturer uses Indonesian.
2. The reason of why the lecturer uses bilingual instruction is because the lecturer realizes that the class the lecturer teaches is different than regular class. It is also because the rule of the department considering that the class is International Class Program makes it a requirement to use bilingual instruction. The lecturer thinks that implementing bilingual instruction in Mathematics ICP class is quite effective for the students although there is an obstacle found that sometimes students get difficulty to understand the material. But the lecturer assumed it is effective because the students will have greater chance to get more knowledge, in this case mathematics and English as well.
3. After computing the data, it is found that the mean of the data from questionnaire was 69,1. If the mean score is classified into the table of score interpretation, it is found that the mean score is located in the range of 69-84. It means that the score can be interpreted into positive. In other words, the response of the respondents in this case the students' attitudes toward bilingual instruction instructed by the lecturer are positive.

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